Health Alert: Topic

Plak-Vac Oral Care System Advisory

October 21, 2011

This document will be updated as new information becomes available. The current version can always be viewed at http://www.health.mo.gov

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P.O. Box 570
Jefferson City, MO 65102
Telephone: (800) 392-0272
Fax: (573) 751-6041
Web site: http://www.health.mo.gov

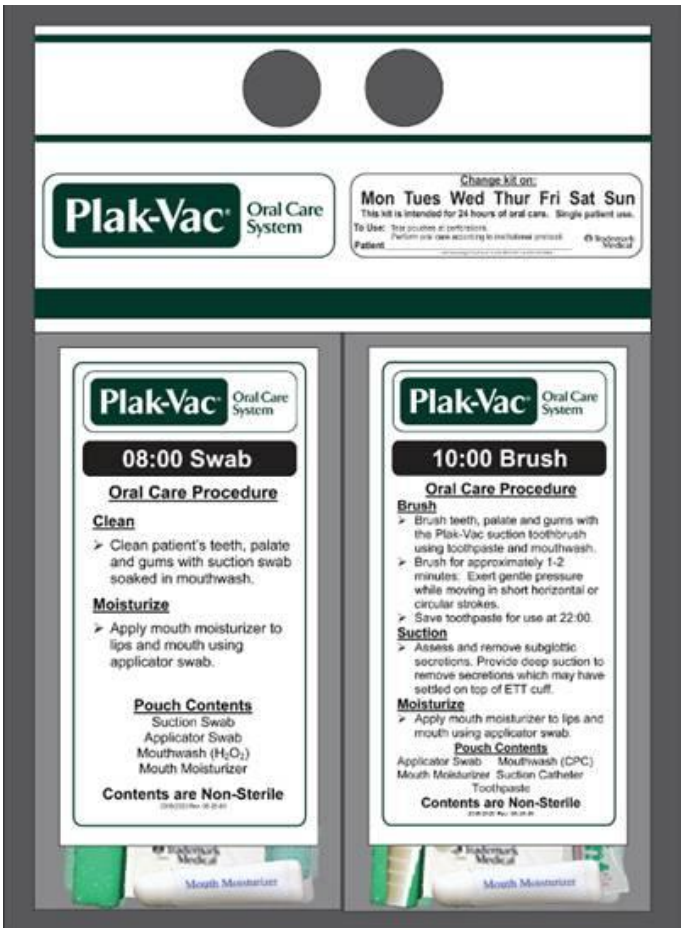
Health Alert
October 21, 2011

FROM: **MARGARET T. DONNELLY**
DIRECTOR

SUBJECT: **Potential Contamination of Plak-Vac Oral Care System**

The Department of Health and Senior Services advises health care facilities to temporarily suspend the use of Plak-Vac Oral Care System. The product has been used by health care facilities for oral hygiene of patients on ventilators. One lot of this product was analyzed and found to be contaminated with *Burkholderia cepacia*. In addition to patients on ventilators, this organism is hazardous to those with chronic respiratory disease, cystic fibrosis or are otherwise immune compromised. The department is working with the Food and Drug Administration on the investigation and further details will be provided as they become available.

The product label is pictured below.



Health Alert:

Shiga toxin-producing Escherichia coli

October 26, 2011

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Health Alert
October 26, 2011

FROM: **MARGARET T. DONNELLY**
DIRECTOR

SUBJECT: **Increase in reported Shiga toxin-producing Escherichia coli (STEC) Illnesses in St. Louis Area**

Situational Update

The St. Louis County Health Department has reported a marked increase in cases of Shiga toxin-producing Escherichia coli (STEC). The cases are being investigated by the St. Louis County Health Department and the Missouri Department of Health and Senior Services (DHSS). At this time the cause of the illnesses is unknown.

CDC has recommended that any person who has signs or symptoms of STEC infection should seek medical care and let the medical provider know about the increase of STEC infections in St. Louis region and the importance of being tested for STEC infection.

Symptoms of STEC infection include severe stomach cramps, diarrhea (which is often bloody) and vomiting. If there is fever, it usually is not very high. Most people get better within 5–7 days, but some patients go on to develop HUS (hemolytic uremic syndrome), usually about a week after the diarrhea starts. The classic triad of findings in HUS is acute renal damage, microangiopathic hemolytic anemia (evidence of schistocytes and helmet cells on peripheral blood smear), and thrombocytopenia.

It is not recommended to give antibiotics to patients with suspected STEC infections until complete diagnostic testing can be performed and STEC infection is ruled out. Some studies have shown that administering antibiotics in patients with STEC infections might increase their risk of developing HUS. However, clinical decision making must be tailored to each individual patient. There may be indications for antibiotics in patients with severe intestinal inflammation if perforation is of concern.

Guidelines to ensure as complete as possible detection and characterization of STEC infections include the following:

- All stools submitted for testing from patients with acute community-acquired diarrhea should be cultured for STEC O157:H7. These stools should be simultaneously assayed for non-O157 STEC with a test that detects the Shiga toxins or the genes encoding these toxins.
- Clinical laboratories should report and send E. coli O157:H7 isolates and Shiga toxin-positive samples to the state public health laboratory as soon as possible for additional characterization.
- Specimens or enrichment broths in which Shiga toxin or STEC are detected, but from which O157:H7 STEC isolates are not recovered should be forwarded as soon as possible to the state public health laboratory so that non-O157:H7 STEC can be isolated.
- It is often difficult to isolate STEC in stool by the time a patient presents with HUS. Immunomagnetic separation (IMS) has been shown to increase recovery of STEC from HUS patients. For any patient with HUS without a culture-confirmed STEC infection, stool can be sent to the CDC (through the state public health laboratory). In addition, serum can be sent to CDC (through the state public health laboratory) for serologic testing of common STEC serogroups.

The benefits of adhering to the recommended testing strategy include early diagnosis, improved patient outcome, and detection of all STEC serotypes.

E. coli is a Category I reportable disease. All patients with Shiga toxin-positive diarrheal illness or HUS either known or suspected cases should be reported to your local public health agency, or to the Missouri Department of Health and Senior Services (DHSS) at 800/392-0272 (24/7).

Laboratory consultation is available from the Missouri State Public Health Laboratory (MSPHL) by calling 573/751-3334, or 800/392-0272 (24/7).

Questions should be directed to DHSS' Bureau of Communicable Disease Control and Prevention at 573/751-6113 or 800/392-0272 (24/7).

Health Alert:

Shiga toxin-producing Escherichia coli

October 28, 2011

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Health Alert
October 28, 2011

FROM: **MARGARET T. DONNELLY**
DIRECTOR

SUBJECT: **Increase in reported Shiga toxin-producing Escherichia coli (STEC) Illnesses in St. Louis Area**

Situational Update 10/28/11

All stools submitted to clinical laboratories for testing from patients with suspected E coli infection should be cultured for O157 STEC on selective and differential agar. These stools should be simultaneously assayed for non-O157 STEC with a test that detects the Shiga toxins or the genes encoding these toxins. Specimens or enrichment broths in which Shiga toxin or STEC are detected but from which O157 STEC are not recovered should be forwarded as soon as possible to the Missouri State Public Health Laboratory.

Situational Update 10/26/11

The St. Louis County Health Department has reported a marked increase in cases of Shiga toxin-producing Escherichia coli (STEC). The cases are being investigated by the St. Louis County Health Department and the Missouri Department of Health and Senior Services (DHSS). At this time the cause of the illnesses is unknown.

CDC has recommended that any person who has signs or symptoms of STEC infection should seek medical care and let the medical provider know about the increase of STEC infections in St. Louis region and the importance of being tested for STEC infection.

Symptoms of STEC infection include severe stomach cramps, diarrhea (which is often bloody) and vomiting. If there is fever, it usually is not very high. Most people get better within 5–7 days, but some patients go on to develop HUS (hemolytic uremic syndrome), usually about a week after the diarrhea starts. The classic triad of findings in HUS is acute renal damage, microangiopathic hemolytic anemia (evidence of schistocytes and helmet cells on peripheral blood smear), and thrombocytopenia.

It is not recommended to give antibiotics to patients with suspected STEC infections until complete diagnostic testing can be performed and STEC infection is ruled out. Some studies have shown that administering antibiotics in patients with STEC infections might increase their risk of developing HUS. However, clinical decision making must be tailored to each individual patient. There may be indications for antibiotics in patients with severe intestinal inflammation if perforation is of concern.

Guidelines to ensure as complete as possible detection and characterization of STEC infections include the following:

- All stools submitted for testing from patients with acute community-acquired diarrhea should be cultured for STEC O157:H7. These stools should be simultaneously assayed for non-O157 STEC with a test that detects the Shiga toxins or the genes encoding these toxins.
- Clinical laboratories should report and send E. coli O157:H7 isolates and Shiga toxin-positive samples to the state public health laboratory as soon as possible for additional characterization.
- Specimens or enrichment broths in which Shiga toxin or STEC are detected, but from which O157:H7 STEC isolates are not recovered should be forwarded as soon as possible to the state public health laboratory so that non-O157:H7 STEC can be isolated.
- It is often difficult to isolate STEC in stool by the time a patient presents with HUS. Immunomagnetic separation (IMS) has been shown to increase recovery of STEC from HUS patients. For any patient with HUS without a culture-confirmed STEC infection, stool can be sent to the CDC (through the state public health laboratory). In addition, serum can be sent to CDC (through the state public health laboratory) for serologic testing of common STEC serogroups.

The benefits of adhering to the recommended testing strategy include early diagnosis, improved patient outcome, and detection of all STEC serotypes.

E. coli is a Category I reportable disease. All patients with Shiga toxin-positive diarrheal illness or HUS either known or suspected cases should be reported to your local public health agency, or to the Missouri Department of Health and Senior Services (DHSS) at 800/392-0272 (24/7).

Laboratory consultation is available from the Missouri State Public Health Laboratory (MSPHL) by calling 573/751-3334, or 800/392-0272 (24/7).

Health Alert:

Shiga Toxin-producing *Escherichia coli*

October 31, 2011

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Health Alert
October 31, 2011

FROM: **MARGARET T. DONNELLY**
DIRECTOR

SUBJECT: **Outbreak of Shiga Toxin-producing E. coli Infection in St. Louis Metropolitan Area**

The Missouri Department of Health and Senior Services (MODHSS) together with the local public health agencies and the Centers for Disease Control and Prevention (CDC) is investigating an outbreak of Shiga toxin-producing *Escherichia coli* infection in St Louis metropolitan area. As of October 31, 2011, 35 specimens have been submitted to the State Public Health Lab. Thus far, 28 of those specimens are positive for E. coli O157:H7, representing 26 cases (more than one specimen was submitted for some cases). In total, there are 32 suspected, probable and confirmed cases of Shiga Toxin-producing E. coli (STEC) infection. Cases of infection have been detected in St Louis County, St Louis City, and St Charles, Jefferson, and Franklin counties in Missouri. Preliminary findings from case interviews indicate that food from the salad bar at a local supermarket chain could be a source. Additional investigation and testing of food items is in progress.
The MODHSS asks providers to consider *E. coli* O157:H7 infection when evaluating patients with diarrhea, particularly bloody diarrhea. Testing for *E. coli* O157:H7 should be specifically requested on stools collected from suspect cases. Laboratories should attempt to isolate *E. coli* O157:H7 on sorbitol-MacConkey (SMAC) agar in addition to standard testing for detection of Shiga-toxin producing bacteria. Suspect or confirmed cases should be reported promptly to the local health department.

Disease due to *E. coli* O157:H7
E. coli O157:H7, or STEC O157:H7, which is a Shiga toxin-producing *E. coli* is an important cause of bloody diarrhea and hemolytic uremic syndrome (HUS). Infection commonly occurs through ingestion of the bacteria, usually through contaminated food products of bovine origin such as undercooked ground beef. Outbreaks have also been associated with consumption of such foods as lettuce, alfalfa sprouts, unpasteurized juices, and fresh spinach. Any food that can be contaminated by beef, cow manure, contaminated water, or an infected food handler may be a potential source of infection. The infectious dose is low, and person-to-person transmission can be quite common. When disease develops, the fever is not usually high, or could be absent. Infection can be entirely asymptomatic or can present with a wide range of clinical features, including watery diarrhea, bloody diarrhea, HUS or thrombocytopenic purpura (TTP). The classic triad of findings in HUS is acute renal damage, microangiopathic hemolytic anemia, and thrombocytopenia. Illness typically begins 3-4 days (ranges from 1-9 days) after exposure. Patients usually develop watery diarrhea; in most patients, the diarrhea resolves without progression and the illness is mild. In those with progressive illness, bloody diarrhea usually begins on the second or third day, with stool content ranging from blood streaks to all blood. Most people get better within 5–7 days, but some patients go on to develop HUS, usually about a week after the diarrhea starts. Physicians evaluating patients presenting with gastrointestinal illness, particular bloody diarrhea, should include *E. coli* O157:H7 in their differential diagnosis.

TESTING
It is required that physician specifically request testing stool for *E. coli* O157:H7 when infection is suspected, especially for patients with bloody diarrhea or HUS. *E. coli* O157:H7 is not detected by standard methods; the recommended medium for isolation is sorbitol-MacConkey (SMAC) agar. Any isolates positive for *E. coli* O157:H7 should be forwarded to the MODHSS for further analysis. If a patient specimen tests negative for *E. coli* O157:H7 but the submitting provider has a high clinical suspicion for *E. coli* O157:H7 disease, the original stool specimens could be forwarded to the State Public Health Laboratory (SPHL) for organism isolation. Laboratories that perform a Shiga toxin detecting assay should forward the enrichment broth from the original stool specimens to the SPHL for organism isolation. Specimen broths positive for Shiga toxin should be subcultured to

SMAC for *E. coli* O157:H7 isolation or forwarded to the SPHL. It is often difficult to isolate STEC in stool by the time a patient presents with HUS. Immunomagnetic separation (IMS) has been shown to increase recovery of STEC from HUS patients. For any patient with HUS without a culture-confirmed STEC infection, stool can be sent to a public health laboratory that performs IMS or to the CDC (through the SPHL). In addition, serum can be sent to CDC (through the SPHL) for serologic testing of common STEC serogroups.

TREATMENT

Treatment for *E. coli* O157:H7 diarrhea includes standard rehydration. Patients should be advised to not use over-the-counter antidiarrheal medications, and should not be prescribed antibiotics. Both treatments have been reported to worsen symptoms and may lead to adverse outcomes. Patients who are showing signs of anemia or kidney dysfunction should be referred for care immediately. It is not recommended to give antibiotics to patients with suspected STEC infections until complete diagnostic testing can be performed and STEC infection is ruled out. Some studies have shown that administering antibiotics in patients with STEC infections might increase their risk of developing HUS. However, clinical decision making must be tailored to each individual patient.

INFECTION CONTROL RECOMMENDATIONS

• Always wash hands after using the toilet, changing diapers, or coming in contact with fecal matter
• Persons involved in patient care, food service, or day care, and experiencing gastrointestinal illness should notify their employer and be excluded until symptoms resolve, unless the cause of illness is determined to be non-infectious. Those positive for *E. coli* O157 may not return until two successive stool samples collected 24 hours apart and obtained no sooner than 48 hours after the last dose of antibiotics (if given) have tested negative.
• Children with diarrhea in day care centers must be sent home and advised to seek medical attention. Children who have been diagnosed with *E. coli* O157 must be excluded until two successive stool samples collected 24 hours apart and obtained no sooner than 48 hours after the last dose of antibiotics (if given) have tested negative.

Laboratory consultation is available from the Missouri State Public Health Laboratory (SPHL) by calling 573/751-3334, or 800/392-0272 (24/7).]
In Missouri, report all known or suspected cases to your local public health agency, or to the Missouri Department of Health and Senior Services (DHSS) at 800/392-0272 (24/7).

FURTHER INFORMATION

Further information is available at the following websites:
MODHSS website –
http://health.mo.gov/living/healthcondiseases/communicable/communicabledisease/cdmanual/pdf/stec.pdf
CDC website –
http://www.cdc.gov/ecoli

Health Alert:

Two cases of invasive *Enterobacter sakazakii* infection in infants treated in Missouri hospitals

December 19, 2011

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Health Alert
December 19, 2011

FROM: **MARGARET T. DONNELLY**
DIRECTOR

SUBJECT: **Two cases of invasive *Enterobacter sakazakii* infection in infants treated in Missouri hospitals**

The Missouri Department of Health and Senior Services (DHSS) has been notified of two cases of invasive *Enterobacter sakazakii* infection in newborns treated in Missouri hospitals within the last month. The most recent case notification occurred yesterday. Of these two cases, one was an out-of-state resident who recovered, and the most recent case was a Missouri resident who has died. Both infants were fed powdered infant formula. Clusters of *E. sakazakii* infections have previously been reported around the world among infants fed milk-based powdered formula from various manufacturers. Testing of all baby formulas involved, as well as all other products given to the babies reported in Missouri is on-going.

Enterobacter sakazakii is a gram-negative rod-shaped bacterium within the family *Enterobacteriaceae.* Recently, *E. sakazakii* has been reclassified as a *Cronobacter sakazakii*; the genus *Cronobacter* is synonymous with *Enterobacter sakazakii.* The natural habitat of *E. sakazakii* is not well understood. The bacterium can be detected in the gut of healthy humans, most probably as an intermittent guest. It can also be found in the gut of animals, as well as in the environment.

The majority of cases of *E. sakazakii* infection reported in the literature have been described in newborns with sepsis, meningitis, or necrotizing enterocolitis as a consequence of the infection, and the case-fatality rate among infected neonates has been reported to be as high as 33% - 80%. The pathogen is also a rare cause of bacteremia and osteomyelitis in adults, but the outcomes related to adult disease seem to be significantly milder.

The scientific literature suggests that premature infants and those with underlying medical conditions are at highest risk for developing *E. sakazakii* infection. Several outbreaks have occurred in neonatal intensive care units worldwide. However, an apparently healthy full-term newborn infant who suffered permanent neurological sequelae has also been previously reported.

Although the reservoir of the organism is unknown, a growing number of outbreaks of infection among newborns has provided compelling evidence that milk-based powdered infant formulas have served as the source of infection. One study tested milk-based powdered infant formula products obtained from a number of different countries and found that *E. sakazakii* could be recovered from 14% of samples. The results of another investigation suggest that even low levels of *E. sakazakii* in milk-based powdered infant formula can lead to development of infection. *E. sakazakii* has been detected in other types of food, but only powdered infant formula has been linked to outbreaks of disease. No exclusively breastfed infants have been reported to have *E. sakazakii* infections.

There are at least three routes by which *E. sakazakii* can enter infant formula:

a) through the raw material used for producing the formula;
b) through contamination of the formula or other dry ingredients after pasteurization; and
c) through contamination of the formula as it is being reconstituted by the caregiver just prior to feeding.

It is important to remember that powdered infant formulas are not commercially sterile products. Powdered milk-based infant formulas are heat-treated during processing, but unlike liquid formula products they are not subjected to high temperatures for sufficient time to make the final packaged product commercially sterile. FDA has noted that infant formulas nutritionally designed for consumption by premature or low birth weight infants are available only in commercially sterile liquid form. However, so-called "transition" infant formulas that are generally used for premature or low birth weight infants after hospital discharge are available in both non-commercially available sterile powder form and commercially sterile liquid form. Some other specialty infant formulas are only available in non-sterile powder form.

Recommendations

In light of the epidemiological findings and the fact that powdered infant formulas are not commercially sterile products, FDA recommends that powdered infant formulas not be used in neonatal intensive care settings unless there is no alternative available. If the only option available to address the nutritional needs of a particular infant is a powdered formula, risks of infection in **healthy and sick** newborn babies can be reduced by:

- Preparing only a small amount of reconstituted formula for each feeding to reduce the quantity and time that formula is held at room temperature for consumption. Do not hold reconstituted formula for longer than two hours without refrigeration. Recognizing differences in infant formula preparation among hospitals, individual facilities should identify and follow procedures appropriate for that institution to minimize microbial growth in infant formulas;
- Minimizing the holding time, while under refrigeration, before a reconstituted formula is fed; and
- Minimizing the "hang-time" (i.e., the amount of time a formula is at room temperature in the feeding bag and accompanying lines during enteral tube feeding), with no "hang-time" exceeding 4 hours. Longer times should be avoided because of the potential for significant microbial growth in reconstituted infant formula.

The World Health Organization guidelines on safe preparation of powdered infant formula are available at: http://www.fao.org/ag/agn/agns/files/pif_guidelines.pdf.

DHSS urges health care providers to report cases of *E. sakazakii* infections in infants to your local public health agency, or to DHSS at 800/392-0272 (24/7).